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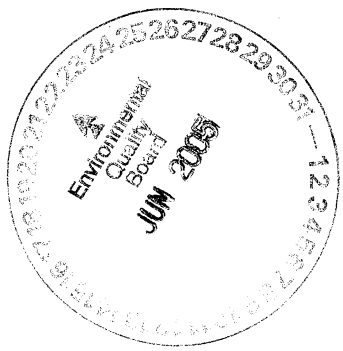

June 21, 2005

Robert A. Schroeder, Chair
Minnesota Environmental Quality Board
658 Cedar Street, Room 300
St. Paul, MN 55155

Re: *In the Matter of the Application by Xcel Energy for a Site Permit for the High Bridge Repowering Project in Ramsey County, Minnesota*;
MEQB Docket No. 05-91-PPS-Xcel High Bridge
OAH Docket No. 4-2901-16586-2

Dear Mr. Schroeder:

Enclosed herewith and served upon you by mail is the Administrative Law Judge's **REPORT AND RECOMMENDATION** in the above-entitled matter. Also enclosed is the official record, with the exception of the tape recording of the hearing. If you would like a copy of the tape, please contact our office in writing or telephone 612-341-7448. Our file in this matter is now being closed.

Sincerely,

Bruce H. Johnson mo.

BRUCE H. JOHNSON
Assistant Chief Administrative Law Judge

Telephone: (612) 341-7607

BHJ:mo
Encl.

cc: James Alders

OAH Docket No. 4-2901-16586-2
MEQB Docket No. 05-91-PPS-Xcel High Bridge

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE ENVIRONMENTAL QUALITY BOARD

In the Matter of the Application by Xcel Energy for a Site Permit for the High Bridge Repowering Project in Ramsey County, Minnesota

REPORT AND RECOMMENDATION

The above-entitled matter came on for hearing before Administrative Law Judge Bruce H. Johnson on May 24, 2005, at 7:00 p.m. in the Lady Slipper Room at the Centennial Office Building, 658 Cedar Street, St. Paul, Minnesota. A public hearing was also held at the same time and place.

Appearances: William Storm appeared on behalf of the staff of the Minnesota Environmental Quality Board ("MEQB"), and Michael C. Connelly appeared as legal counsel for the Applicant, Northern States Power Company d/b/a Xcel Energy ("Xcel Energy" or "the Company). James R. Alders and Susan C. Larson of Xcel Energy and John T. Lee, Barr Engineering Co., appeared as witnesses on behalf of Xcel Energy.

NOTICE

This project qualifies for alternative review under the Power Plant Siting Act, Minn. Stat. § 116C.575. The MEQB was not required to hold a contested case hearing on this project pursuant to Chapter 14, and it did not do so. Under MEQB rules, the MEQB has the option to conduct a public hearing itself or to request that an Administrative Law Judge conduct the hearing and compile a record for the MEQB to consider in making its final decision. The MEQB also has the option to request that the Administrative Law Judge prepare a report and recommendation, which it did in this case. This report contains a summary of the evidence in the record and a recommendation based on that record. It is not a final decision. Pursuant to Minn. Stat. § 116C.575, subd. 7, the MEQB will make the final determination of the matter within 60 days of the completion of the public hearing. Persons wishing to file comments concerning this report with the MEQB should contact William Storm for information about the procedures to be followed. Further notice is hereby given that the MEQB may, at its own discretion, accept or reject the Administrative Law Judge's recommendation.

STATEMENT OF ISSUE

Should the MEQB issue a Site Permit to Xcel Energy for the construction of a natural gas-fired 2-on-1 combined cycle power plant, capable of producing 480 to 665 megawatts (MW), at Xcel's High Bridge Plant site in St. Paul to replace the existing 270 MW coal-fueled plant at that location?

Based upon all the proceedings herein, the Administrative Law Judge makes the following:

SUMMARY OF EVIDENCE

A. Procedural History and the Parties

1. Northern States Power Company, doing business as Xcel Energy is a public utility under the laws of the State of Minnesota. Northern States Power Company is a wholly owned subsidiary of Xcel Energy, Inc.,[1] is the fourth-largest combination electric and natural gas energy company in the United States, and maintains its headquarters in Minneapolis, Minnesota.[2]

2. On July 26, 2002, Xcel Energy submitted its Metro Emissions Reductions Proposal (MERP) to the Minnesota Public Utilities Commission (MPUC) for approval pursuant to Minn. Stat. § 216B.1692.[3] The purpose of the MERP is to substantially reduce air emissions associated with Xcel Energy's electricity generation in the Twin Cities metropolitan area by converting or upgrading three existing plants. Included in the MERP was a proposal to replace Xcel Energy's existing coal-fired units at its High Bridge Plant in St. Paul with a natural gas-fired, 2-on-1 combined cycle system power plant.[4]

3. The MPUC issued an order approving the MERP on March 8, 2004. Among other things, that order stated that conversion of Xcel Energy's High Bridge Plant from coal fueled to natural gas fueled was exempted from the certificate of need requirements of Minn. Stat. § 216B.[5]

4. On January 31, 2005, Xcel Energy filed an application (Site Application) with the Minnesota Environmental Quality Board (MEQB).[6] The Company is requesting a Site Permit to construct a natural gas-fired, 2-on-1 combined cycle power plant, capable of producing 480 to 665 MW, to replace Xcel's existing 270 MW coal fueled plant at its High Bridge Plant site (the Project).[7]

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[1] Exhibit 3, at 1-2.

[2] *Id.*

[3] Unless otherwise specified, all references to Minnesota Statutes are to the 2004 edition, and all references to Minnesota Rules are to the 2003 edition.

[4] Exhibit 3, at ¶¶ 1.1 and 1.3; Exhibit 18, at ¶ 3.1.

[5] Exhibit 18, at ¶ 3.1; *see also* Minn. Stat. § 216B.243, subd. 8(5).

[6] Exhibit 18, at ¶ 2.0; Exhibit 5.

[7] Exhibit 3, at 1-1.

5. Xcel Energy's Site Application seeks review of its proposal using the procedures of Minnesota Statute Section 116C.575 and Minnesota Rules 4400.2000 through 4400.2950, known as the Alternative Permitting Process. The Project is eligible to be considered under the Alternative Permitting Process because the proposed units will be fueled by natural gas.[8]

6. On February 4, 2005, the MEQB accepted Xcel Energy's application and began the review process. The MEQB determined that because the proposed Project would be constructed on the existing High Bridge Plant site, it was unnecessary to appoint a citizen advisory task force to consider alternative sites.[9]

7. On February 11, 2005, Xcel Energy published a notice with a description of the Project, as proposed to the MEQB, as required by Minn. R. pt. 4400.1350, subp. 4, in the Saint Paul Pioneer Press, a newspaper of general circulation within the City of Saint Paul and the County of Ramsey. The notice also stated where a copy of the application could be reviewed.[10]

8. On February 19, 2005, the MEQB Staff sent a notice of public information meeting, as required by Minn. R. 4400.1550, subp. 2, to the persons specified in Minn. R. 4400.1350.[11] Additionally, the notice was published in the Saint Paul Pioneer Press on February 19, 2005.[12] The notices announced that the MEQB would hold a public information meeting in room 302 of the Centennial Office Building in the State Capitol Complex, 658 Cedar Street in St. Paul, Minnesota, on March 3, 2005 at 3:00 p.m. and 7:00 p.m.[13]

9. The MEQB conducted the public information meeting in room 302 of the Centennial Office Building in the State Capitol Complex, 658 Cedar Street in St. Paul, Minnesota, on March 3, 2005 at 3:00 p.m. and 7:00 p.m.[14] Xcel Energy representatives and three other people attended. The public had an opportunity to ask questions during informal discussions with Company representatives. The deadline for written comments was set as 5:00 p.m. on March 21, 2005. No written comments were received.[15]

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[8] Minn. R. 4400.2000, subp. 1 , item B.

[9] Exhibit 5.

[10] Exhibit 29.

[11] Exhibit 11.

[12] Exhibit 12.

[13] Exhibits 11 and 12.

[14] Exhibit 16.

[15] Exhibit 16, at 3.

10. On March 22, 2005, after consideration of the public comments, the Chair of the MEQB issued a Scoping Order.[16] Notice of the Scoping Order was provided by the MEQB to the persons specified in Minn. R. 4400.2750, subp. 3.[17]

11. Thereafter, the MEQB Staff completed an environmental assessment ("EA"), as required by Minn. Stat. § 116C.575, subd. 5, and Minn. R. pt. 4400.2750. On April 28, 2005, the MEQB Staff issued a Notice of Public Hearing and Notice of Availability of the EA as required by Minn. R., pt. 4400.2850 to the persons specified in the rule. Additionally, the notice was published in the EQB Monitor on May 9, 2004.[18]

12. In addition to providing notice that the MEQB's EA was available, the MEQB's notice of April 28, 2005, also contained a Notice of Public Hearing as required by Minnesota Rule 4400.2850 to the persons specified in Minn. Stat § 116C.57, subd. 2d.[19] Additionally, the MEQB published notice of the public hearing in the Saint Paul Pioneer Press on May 5, 2005.[20] The notice announced that the MEQB would hold a public hearing in the Lady Slipper Room of the Centennial Office Building in the State Capitol Complex, 658 Cedar Street in St. Paul, Minnesota, on May 24, 2005 at 7:00 p.m.[21]

13. Pursuant to published notice, a public hearing was held on May 24, 2005, at 7:00 p.m., as required by Minn. Stat. § 116C.575, subd. 6, and Minn. R. 4400.2850. Representatives of Xcel Energy and the MEQB staff attended the public meeting and were available to respond to questions, but no member of the public posed any questions or offered any statement regarding the Site Application.

14. Immediately following the public hearing on May 24, 2005, the undersigned ALJ conducted an evidentiary hearing on Xcel's Site Application. William C. Storm of the MEQB staff began the evidentiary hearing by describing the Project, explaining the process to be followed, and placing into the hearing record the supporting documents that were relevant to the Site Application.[22] Thereafter, Xcel Energy presented the oral testimony of Susan C. Larson, John T. Lee, and James Alders, all of

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[16] Exhibit 16, at 1-2.

[17] Exhibit 17.

[18] Exhibits 20 and 22.

[19] Exhibit 20.

[20] Exhibit 21.

[21] Exhibits 20 and 21.

[22] Exhibits 1 through 23.

whom also placed some pre-filed testimony and supporting documentation into the hearing record.[23]

15. At the close of the hearings, the Administrative Law Judge established a June 3, 2005, deadline for submission of written comments on the EA.[24]

16. On June 6, 2005, the MDNR submitted written comments on the EA that emphasized the fact that although the Project will be constructed on an existing industrial site, it is nevertheless located within the state-designated Mississippi River Critical Area Corridor District and the coterminous federal Mississippi National River and Recreation Area.[25] The MDNR indicated that it agreed with Xcel Energy and the EA that the project will improve aesthetics and views from the Critical Area with the decreased height of exhaust stacks, smaller mass and neutral color of structures, and elimination of the existing coal storage area. But the MDNR also recommended that the Project include site revegetation with native species of trees, shrubs, and grasses in a way that does not compromise the clearance needed for structures. In substance, the MDNR concluded that revegetation with native plant species, rather than Kentucky bluegrass lawn, would create additional buffers between the Project and the river, reduce the stormwater runoff rate, control erosion, and provide habitat for wildlife. The MDNR also emphasized the need to prevent erosion, sedimentation, or pollution during construction, any environmental remediation activities, and operation of the Project.[26]

B. General Description of the Plant and the Project

17. The High Bridge Plant is located on a 77-acre site between Shepard Road to the northwest and Randolph Road to the southeast in the City of St. Paul, Ramsey County, Minnesota. The Plant currently consists of four coal-fired units with a nominal capacity of 271 MW.[27]

18. Xcel Energy proposes replacing the coal-fired plant with a natural gas-fired, 2-on-1 combined cycle system, consisting of two combustion turbines, corresponding heat recovery steam generators, and a new steam turbine generator with a capacity of 480-635 MW (depending on operating conditions). The Project's generating units will be installed in a new building located at the southwest corner of the

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[23] The pre-filed testimony of Susan C. Larson was received as Exhibit 24. The pre-filed testimony of John T. Lee was received as Exhibit 25, together with supporting Exhibit 26. The pre-filed testimony of James Alders was received as Exhibit 27, together with supporting Exhibit 28 and 29.

[24] With leave of the ALJ, the Minnesota Department of Natural Resources (MDNR) was given an extension of the time to file its comments until Monday, June 6, 2005.

[25] *See* Exhibit 30. *See also* Exhibit 3, at 4-12 and Figure 4-3, and Exhibit 18, at 25 and Figure 10.

[26] *Id.*

[27] Exhibit 3, at 1-2 and 2-1.

existing site. No expansion of the existing Plant site will be required by the Project. Coal-fired generation would be eliminated entirely at the site.[28]

19. In addition to the new combustion turbine generators (CTGs) and associated generators, new plant equipment will include:

a. Three generator step-up transformers;

b. An 800-foot overhead transmission line to connect the transformers to the High Bridge Substation, which will be relocated within the plant site;

c. a gas metering station;

d. an evaporate cooler; and

e. two exhaust stacks with silencers.[29]

C. Transmission Interconnection

20. The two combustion turbine generators and the steam turbine generator will generate electricity at a voltage of 18 kV. Three generator step-up transformers will increase the voltage to 115 kV. A 115-kV overhead transmission line approximately 800 feet long will connect the transformers to the relocated High Bridge Substation located on the Project site, east of the generating Plant. The transmission interconnection will require at least two tubular steel tower structures, one adjacent to the Plant and the other just outside the substation. In order to accommodate the Project, Xcel Energy will need to relocate the High Bridge Substation. Eight transmission line structures will also need to be relocated along three transmission lines connected to the substation. All of the relocated lines will remain at the same voltage, but will be reconductored. These associated facilities are part of the request for a site permit to construct the Project.[30]

21. The existing coal-fired High Bridge Plant will be decommissioned after the new gas-fired plant begins commercial operation. Decommissioning will include demolition and removal of equipment and structures, removal of asbestos and lead, remediation of contaminated soils, if necessary, and revegetation.[31]

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[28] Exhibit 3, at 2-1, and Exhibit 24; Direct testimony of Susan C. Larson.

[29] Exhibit 3, at 3-1 through 3-8; Exhibit 18, at 2-3.

[30] Exhibit 3, at 3-2 through 3-4; Exhibit 18, at 8-9.

[31] Exhibit 3, at 2-3.

D. Fuel Supply

22. The new units will be fueled by natural gas. The Project is expected to be supplied with high-pressure natural gas via a new high-pressure natural gas pipeline connecting the plant with the existing Northern Natural Gas interstate pipeline at the Mendota Regulator Station, approximately 3 miles to the west of the Plant. Additional pipe replacements and additions may need to be made to the existing pipeline between the Mendota Regulator Station and the Cedar Town Border Station.[32]

23. The routing of the proposed pipeline is not part of this proceeding. Xcel Energy intends to file an Application to the MEQB for a Gas Pipeline Route Permit later this year.[33] Accordingly, there is no need to make any findings concerning natural gas in this proceeding.

D. Water Supply

24. The Project will need water for domestic-type uses, fire protection, once-through non-contact cooling (condensers), steam system make-up water (heat recovery steam generators), closed cooling system make-up water, and turbine inlet air cooling (evaporative cooling).[34]

25. Water will be drawn from three sources. Water for domestic-type uses and for fire protection will be drawn from the City of St. Paul's municipal water supply.[35] Some water drawn from the City's municipal water supply will also be used for turbine inlet air evaporative cooling.[36] Water for steam system make-up and closed cooling make-up water will be obtained from an on-site well.[37] Once-through non-contact cooling water will be drawn from the Mississippi through the intake structure of the existing plant, as modified to comply with existing requirements of Section 316(b) of the Clean Water Act.[38]

26. Expected annual municipal water usage by the Project will only represent a small fraction of the water available from the City of St. Paul's water utility.[39] The proposed appropriation rate from the on-site well will be less than the currently

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[32] Exhibit 24, at 4.

[33] Exhibit 3, at 1-5; Exhibit 24, at 3-4.

[34] Exhibit 3, at 3-5; Exhibit 18, at 4-6.

[35] The source used for the same uses at the existing plant.

[36] Exhibit 3, at 3-7.

[37] Exhibit 3, at 3-6.

[38] Exhibit 3, at 3-5 and 3-6.

[39] Exhibit 18, at 5.

permitted volume of 50 million gallons per year at a maximum rate of 0.25 million gallons per day (MGD).[40] The make-up water that will be obtained from the Plant water well contains minerals and other dissolved solids that require that the water be treated. A water treatment system, consisting of a reverse osmosis (RO) system followed by mixed bed deionization will be required to produce acceptable water for the make-up water.[41]

27. The once-through cooling that will be drawn from the Mississippi River will enter the proposed new High Bridge Plant through the existing intake structure. Xcel Energy expects to maintain the current withdrawal capacity and rate of water for cooling purposes (about 201 MGD). The anticipated withdrawal is approximately 2.6 percent of the mean annual river flow of 7,600 MGD and is less than the 5 percent of the mean annual river flow the Section 316(b) of the Clean Water Act requires.[42] However, that Act requires that the intake velocity be less than or equal to 0.5 feet per second, and the existing intake does not meet that requirement. Xcel will therefore be modifying the existing intake so that it meets that requirement.[43]

E. Generation and Treatment of Wastewater

28. Water used for each of the operational processes at the proposed High Bridge Plant, excepting fire protection, will become a source of wastewater. Water used for boiler or steam generator blowdown and for domestic-type uses will be discharged into the St. Paul sanitary sewer system.[44]

29. The reverse osmosis treatment process for the well water used for steam system make-up and closed cooling make-up will generate a wastewater with a concentration of the minerals that are naturally present in the source groundwater. This wastewater, and evaporative cooling water blowdown will be discharged to the Mississippi River with the once-through cooling water when the cooling system is operating. If reverse osmosis reject water and evaporative cooling water blowdown are being generated when the cooling system is not operating, those wastewater streams will be discharged to the St. Paul sanitary sewer system.[45]

30. After being drawn from the intake on the Mississippi River, the once-through non-contact cooling water will pass through the condenser, where it will

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[40] Exhibit 18, at 4.

[41] Exhibit 3, at 3-6 and 3-7; Exhibit 18, at 5.

[42] Exhibit 3, at 3-6; Exhibit 18, at 6.

[43] Exhibit 18, at 6.

[44] *Id.*

[45] Exhibit 3, at 3-6 and 3-7; Exhibit 18, at 5.

increase in temperature between 15 to 24 degrees F, and then will be discharged back into the river immediately downstream.[46]

F. Environmental and Socioeconomic Impacts

Applicable Statutory Considerations

31. In making site and route permit determinations, the MPQB is to be "guided by the state's goals" to conserve resources, minimize environmental impact, minimize land use conflicts, and ensure electric energy security.[47] Minn. Stat. § 116C.57, subd. 4, specifically requires:

> (1) Evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;
>
> (2) Environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;
>
> (3) Evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;
>
> (4) Evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;
>
> (5) Analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;
>
> (6) Evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;
>
> (7) Evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;

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[46] Exhibit 18, at 6.

[47] Minn. Stat. § 116C.57, subd. 4.

(8) Evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;

(9) Evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;

(10) Evaluation of the future needs for additional high voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;

(11) Evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and

(12) When appropriate, consideration of problems raised by other state and federal agencies and local entities.

The Application and the EA contain adequate information to allow the MEQB to consider these factors.

32. Where MEQB's rules are substantially similar to existing applicable federal regulations, such regulations must be applied by the MEQB.[48] Also, no site or route can be designated where such designation would violate state agency rules.[49] The application and the Environmental Assessment contain adequate information to allow the MEQB to consider these factors.

Applicable Rule Considerations

33. The MEQB has adopted rules requiring consideration of specific impacts when making decisions on siting of electrical plants. The specific impacts are:

A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;

B. effects on public health and safety;

C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;

D. effects on archaeological and historic resources

[48] Minn. Stat. § 116C.57, subd. 4.

[49] *Id.*

E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;

F. defects on rare and unique natural resources;

G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;

H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;

I. use of existing large electric power generating plant sites;

J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;

K. electrical system reliability;

L. costs of constructing, operating and maintaining the facility which are dependent on design and route;

M. adverse human and natural environmental effects which cannot be avoided; and

N. irreversible and irretrievable commitments of resources.[50]

Each of those specific considerations is assessed in the following Findings.

Effects on Human Settlement

Community Benefits Expected from the Proposed Plant

34. The local community will benefit from construction of the project. The Project will require an estimated 300 construction workers over the 18 to 24-month construction period, which will generate approximately $15 million in payroll in the regional economy.[51] When completed, operation of the Project will require 25 full-time equivalent positions, as well as other jobs created as the result of periodic major maintenance.[52] Xcel Energy expects to contribute property taxes arising from the Project to the City of St. Paul, Ramsey County, and the St. Paul School District.[53]

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[50] Minn. Rule 4400.3150.

[51] Exhibit 3, at 4-15; Exhibit 18, at 35.

[52] Exhibit 18, at 35.

[53] *Id.*

Displacement

35. The proposed site for the new generating units will be located within the 77-acre existing High Bridge Plant site, which is owned by Xcel Energy and situated in an industrial-zoned area. The Project will not require the displacement of any occupied residences or businesses, and work on the Project will not result in any change of land use in the area or displace any other existing or planned land use, including residential land uses.[54] There will also be no significant adverse impacts on local businesses.[55]

Noise

36. Noise will be generated by construction and operation of the Project. Potential noise impacts during construction will be mitigated by proper muffling equipment fitted to construction equipment. Construction activities will be restricted during nighttime hours.[56]

37. When operational, the Project will create noise as a result of airflow through the combustion intakes and from the exhaust gases discharging through the stacks. In order to minimize that noise, air inlets will be appropriately sized and fitted with diffusers to minimize the velocity of air moving into the inlets and, therefore, that source of noise. The stacks will be fitted with silencers to reduce the noise of exhaust gases leaving the plant.[57]

38. The noise produced by operation of the Project is expected to be predominantly low frequency noise, like the noise produced by traffic. Because of the high background noise levels in the low frequency range created by nearby roadways, such as the High Bridge and Shepard Road, the noise produced by operating the Project will not significantly impact the acoustical environment.[58]

39. The Project is located in an industrial area. The nearest residences will be located in a townhouse development that is being constructed directly northeast of the site.[59] The Minnesota noise L_{50} standard is the sound level that must not be exceeded for more than 50 percent of any given hour (i.e., 30 minutes). The nighttime standards (the most restrictive) apply from 10:00 p.m. through 7:00 a.m. Models were developed

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[54] Exhibit 3, at 4-11; Exhibit 18, at 32-33.

[55] The nearby Rock-Tenn Paper Company will lose a source of steam when the existing coal-fired plant is decommissioned, but it has several years in which to address that change. Exhibit 18, at 32.

[56] Exhibit 3, at 4-10.

[57] *Id.*; Exhibit 18, at 40.

[58] *Id.*

[59] Exhibit 18, at 24.

of the effects of the Project's noise sources on nearby residences. Model results show that noise levels from the Project will be below all the applicable Minnesota standards.[60]

40. Operation of the Project will not result in perceptible increases in noise levels in nearby residential areas and the Project, by itself, will not result in violations of state and local noise standards.[61]

Aesthetics

41. The existing High Bridge Generating Plant and its coal storage area are already located on the Project Site. The Project will involve elimination of the building that houses the existing generating plant, a 530-foot stack, and a 125,000 ton coal storage area. The new gas-fired Plant will be smaller than the existing plant, and the new exhaust stacks will be more than 300 feet lower than the existing plant.[62]

42. The conversion from a coal-fired to gas-fired facility will result in a less industrial look and reduced visual impact on the surrounding areas.[63] In summary, the design, location, and nature of the Project will result in no significant impact to area aesthetics.

Cultural Values

43. The new generating units will be located within the footprint of an existing plant in an industrial-zoned area. So, the Project will result in no discernable land use changes. The Project will therefore cause no changes in cultural values.[64]

Recreation

44. The City of St. Paul maintains Shepard Road and Sam Morgan Regional Trails along the north and south boundary of the Project site, respectively. But the Project is more consistent with public use of those trail systems than the existing plant, and no tourism or recreation areas will be adversely impacted by the Project.[65]

Public Services

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[60] Exhibit 3, at 4-10 and 4-11; Exhibit 18, at 40, Figure 18, and Table 15.

[61] Exhibit 3, at 9; Exhibit 18, at 40.

[62] Exhibit 3, at 4-11 and 4-12; Exhibit 18, at 27 and Figure 17.

[63] Exhibit 3, at 4-11 and 4-12.

[64] Exhibit 3, at 4-11 and 4-12.

[65] Exhibit 3, at 4-12; Exhibit 18, at 26 and Figure 10.

45. The Project will utilize its own generating capacity to provide ongoing operational electrical needs. Although the Project Site currently does not have natural gas utility service, a new natural gas transmission pipeline that will be constructed in association with the Project will provide it with its natural gas fuel supply.[66] Construction and operating simplicity associated with combined cycle technology will result in a minimal burden on roadways and public services.[67]

46. The Project will be equipped with a complete fire protection system, designed in accordance with National Fire Protection Association (NFPA) guidelines that will include water and carbon dioxide protection measures.[68]

47. Other public services that will be needed for the construction and operation of the Project, including water and sewer, waste collection and disposal, and police services, are currently available in the St. Paul area. For example, the St. Paul Police Department's Downtown Substation is located only a few miles from the Project. Those existing public services will be adequate for the Project, and it will not require extraordinary public services nor strain the public infrastructure.[69]

Effects on Public Health and Safety

48. In addition to air and noise impacts,[70] plant security and emergency preparedness, are typical health and safety concerns for new generators and transmission lines. A six-foot high chain link fence surrounds the existing Plant to prevent vandalism and to secure operations on site. During construction, Xcel Energy will employ a security service to guard the equipment and prevent vandalism during the day. This service will supplement the protection provided by the St. Paul Police Department. The Plant is equipped with a fire protection system supplied by a dedicated fire well on site (separate from the well used for potable water). An electric fire pump supplies water from the dedicated fire well to hydrants situated around the site. The existing fire equipment is designed in accordance with NFPA requirements and the additions to the Plant will meet those requirements.[71]

49. No adverse effects to public health or safety have been shown to arise from the Project.

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[66] Exhibit 3, at 4-13; *see* Finding Nos. 22 and 23, *supra*.

[67] Exhibit 18, at 36.

[68] Exhibit 18, at 28.

[69] Exhibit 3, at 4-13; Exhibit 18 at 28 and 40.

[70] *See* Finding Nos. 36 through 40 and 56 through 61.

[71] Exhibit 3, at 4-12 and 4-13; Exhibit 18, at 28.

Effects on Land-Based Economies

50. No agricultural land will be used for the Project, nor will any prime farmland be taken out of production.[72] No forest-related or mining-related industries will be adversely impacted by the construction or operation of the project. [73] Additionally, the Project will not adversely impact any tourism areas.[74]

Effects on Archeological and Historic Resources

51. The Project will be constructed on an existing industrial site. Therefore, there will be no direct impacts to any buildings, including historic structures, except the existing High Bridge Plant. A review of the Minnesota State Historic Preservation Office (SHPO) records indicated there are numerous reported historic or archaeological resources in the vicinity of the Project site, including the existing High Bridge Plant, the St. Paul Gas and Light Company Island Plant just southwest of the Project site, and the John J. Ramsey house, approximately 2,500 feet north of the Plant.[75]

52. Because of the listing of the existing Plant in the SHPO database and the close proximity of a large number of historical properties, a Phase I architectural history evaluation and Area of Potential Effect (APE) scoping was completed for the Project. The purpose of the investigation was to evaluate the eligibility of the existing High Bridge Plant for the National Register of Historic Places (NRHP) and to define the Project's visual effects APE. That investigation concluded that: (1) The existing Plant is not eligible for individual listing on the NRHP due to lack of historical significance, nor is the Plant eligible for listing on the NRHP as a contributing property within an existing or potential historic district; and (2) while the proposed visual effects APE encompasses a large area due to the height of the existing Plant's smoke stack, the proposed Project is unlikely to have an adverse effect on the historic properties within the APE. [76]

53. The Project will therefore have no adverse effect on the historical properties in the vicinity of its site.[77]

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[72] Exhibit 18, at 33.

[73] Exhibit 18, at 34.

[74] Exhibit 3, at 4-12; Exhibit 18, at 32.

[75] Exhibit 3, at 4-14; Exhibit 18, at 27.

[76] *Id.*

[77] Exhibit 18, at 35.

Effects of the Project on the Natural Environment, Including Effects on Air and Water Quality Resources and Flora and Fauna

Effects on Geology and Soils

54. The Project site is located within the Mississippi Bottomland geomorphic region and is underlain by approximately 100-160 feet of unconsolidated sediments according to site well logs. This region is located within a buried bedrock valley that was eroded and filled during a series of late- and post-glacial events. Directly beneath the site are Holocene-aged sediments associated with the current Mississippi River. These sediments are composed primarily of sand and gravel with some fine-grained sediments and organic material. All soils on the Project site are currently classified as "Urban Land." The soils were already disturbed and in industrial use prior to the Soil Survey. The area to be disturbed for construction has already been graded and filled, and is currently used as the existing High Bridge Plant's coal storage area.[78]

55. Since the Project will be located on an existing industrial site, conversion from a coal-fired to gas-fired plant will not negatively impact area geology and soils.[79]

Effects on Air Quality

56. The Project's two identical combined cycle combustion turbines will be equipped with dry, low-NOx combustors to control nitrous oxide emissions. Each of the combustion turbines will exhaust to a separate heat recovery steam generator equipped with supplemental duct-firing capacity. Xcel Energy will install a selective catalytic reduction (SCR) system within each heat recovery steam generator to reduce NOx emissions from the combustion turbine and duct burner exhaust when operating in the combined cycle mode of operation. Secondary combustion sources include an auxiliary boiler and a new diesel-driven fire pump. One of the emergency diesel-driven generators from the existing High Bridge Plant will be retained for emergency backup service at the new combined cycle Plant. This unit will not be modified.[80]

57. Xcel Energy must obtain a Prevention of Significant Deterioration (PSD) permit from the Minnesota Pollution Control Agency (MPCA) prior to construction of the Facility. On January 21, 2005, Xcel Energy submitted an Air Emissions Permit Major Amendment Application (Permit No. 12300012-003) for the Project to the MPCA.[81]

58. Replacement of the existing coal-fired High Bridge Plant with the proposed Project will result in significant decreases in sulfur dioxide (SO_2), nitrogen oxide (NO_X),

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[78] Exhibit 3, at 4-15; Exhibit 18, at 25 and 26.

[79] *Id.*

[80] Exhibit 3, Application, pp. 4-1 through 4-5; Exhibit 18, at 30.

[81] Exhibit 18, at 30.

and particulate matter (PM_{10}) emissions.[82] Since emissions of those regulated pollutants will decrease, they are therefore not subject to PSD review.[83] However, replacement will result in some increases of carbon monoxide (CO) and volatile organic compounds (VOCs). The Project will therefore be subject to PSD review for those emissions.[84]

59. As part of the PSD permit application, air-dispersion modeling was performed to determine compliance with the National and Minnesota Ambient Air Quality Standards (NAAQS and MAAQS) or a PSD increment. The Company relied on MPCA guidance to determine the appropriate background concentrations for NO_2 and CO. The modeling results demonstrate that emissions from the completed Project, together with emissions from other regional emission sources, comply with corresponding standards.[85]

60. Another potential source of air emissions is fugitive dust from site preparation and construction activities. Xcel Energy will control fugitive dust emissions to reduce their impact on area residents by watering or applying dust suppressants to exposed soil surfaces, as necessary.[86]

61. In view of Finding Nos. 56 through 60, *supra*, the Project will not result in any significant impact on air quality.

Effects on Water Quality

62. Water will be needed for the Project for domestic-type uses, fire protection, turbine inlet air evaporative cooling, steam system make-up water, closed cooling system make-up water, and once-through cooling. Xcel Energy will request an amendment to the Plant's existing Well Water Appropriations Permit No. 69-1090 (as amended Sept. 16, 2003) and existing River Water Appropriations Permit No. 76-6347 (dated January 17, 1977) to address the change in water usage for the Project from the uses currently described in the permits. No increase in appropriation rate or annual withdrawal volume will be requested in either permit amendment request.[87]

63. The primary source of wastewater will be the once-through cooling water obtained from and then discharged back to the Mississippi River. It is estimated that a negligible amount of the water will be lost to evaporation and the discharge from this

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[82] Exhibit 3, at 4-3; Exhibit 14; Exhibit 18, at 30; and Exhibit 26.

[83] *Id.*

[84] *Id.*

[85] Exhibit 14; Exhibit 18, at 31 and Table 13; and Exhibit 26.

[86] Exhibit 18, at 32.

[87] Exhibit 3, at 4-5; Exhibit 18, at 4 and 36.

source will be approximately the same as that withdrawn from the river. It is not anticipated that there will be a significant change in the quality of this water and all of the wastewater from this source will be discharged back to the river.[88]

64. The thermal input to the once-through cooling water for the proposed Plant will be less than the thermal input to the cooling water for the existing Plant. It is expected that there will be minimal differences in the discharge temperature for the existing and proposed Plant and, as a result, temperatures downstream in the Mississippi River are not expected to increase compared to historical operations.[89]

65. The discharge temperatures of the once-through cooling water for the proposed Plant are expected to be similar to the range of historical discharge temperatures of cooling water used in the existing Plant.[90]

66. The current Plant NPDES permit (MN0000884) limits discharges from the existing High Bridge Plant so that the temperature of the Mississippi River is not increased by more than 5°F at the edge of the regulatory mixing zone. The permit also provides limits that are based upon in-stream river temperatures that cannot be exceeded. Temperature transect studies were completed from 1977 and 1978 and demonstrated compliance with the permit conditions. Because the proposed Plant will have lower thermal input compared to the existing Plant and discharge temperatures are expected to be similar for the proposed Plant, the proposed Plant will be capable of complying with the thermal discharge limits of the current NPDES permit.[91]

67. Water quality of the various discharges will reflect the water source, processes that concentrate the water quality of the water source by evaporation or treatment (reverse osmosis), and the addition of chemicals either for process water treatment or water scaling protection. The water chemistry of the once-through cooling water is expected to be similar to the water chemistry of the Mississippi River, which serves as the source water.[92]

68. Chlorine as sodium hypochlorite will be added to the once-through cooling water to prevent scaling on cooling system components. It is expected that chlorine usage and residual levels for the proposed Plant will be similar to the existing Plant's historical levels given the similar expected use and flow rates.[93]

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[88] Exhibit 3, at 4-8; Exhibit 18, at 39.

[89] *Id.*

[90] *Id.*

[91] Exhibit 3, at 4-8 and 4-9; Exhibit 18, at 39.

[92] Exhibit 3, at 4-9; Exhibit 18, at 39.

[93] Exhibit 3, at 4-9.

69. The water quality of the other wastewater sources, the reverse osmosis reject water, discharge from the evaporative coolers, mixed-bed deionization system reject water, and steam process boiler blowdown, is a function of how the source water becomes concentrated and how chemicals are used in the treatment process. The process wastewaters will be combined with the cooling water discharge for discharge to the Mississippi when the cooling system is operating. The process wastewaters will be discharged to the St. Paul Sanitary System (MCES) if they are generated while the cooling system is not operating. The service wastewater and domestic wastewater from the Project will be discharged to the St. Paul sanitary sewer system.[94]

70. Water usage and wastewater generation associated with operation of the Project will be similar to that of the existing High Bridge Plant, so the Project will not have a major impact on water supplies or wastewater treatment facilities.[95]

71. The Project will not significantly impact area water bodies. The Project site lies on the north bank of the Mississippi River. River water usage will remain approximately the same as the current Plant for the new facility.[96] Surface water runoff from the Project will follow existing drainage patterns to an on-site infiltration basin at the west end of the site or to existing catch basins located on the eastern portion of the site that discharge directly to the Mississippi River. No streams, other than the Mississippi River, or lakes exist on or around the Project site.[97]

Effects on Vegetation

72. The site of the new generating Plant is currently industrial and already free of vegetation. The pre-settlement nature in the vicinity of the Project was floodplain forest. Since settlement, the Project vicinity has been developed, which has effectively removed most evidence of the pre-settlement vegetation. The native forests were almost entirely replaced with industrial, commercial and residential land uses. There are some remnants of pre-settlement oak and maple-basswood forest vegetation indicated by the Minnesota County Biological Survey across the Mississippi River from the Plant site. Because of their location on the opposite side of the river, these remnants will not be negatively impacted by construction activities.[98]

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[94] Exhibit 3, at 4-9.

[95] Exhibit 3, at 4-5.

[96] Exhibit 3, at 4-16; Exhibit 18, at 36.

[97] Exhibit 3, at 4-16; Exhibit 18, at 38.

[98] Exhibit 3, at 4-16; Exhibit 18, at 33.

73. Urban-adapted wildlife, including foxes and songbirds, has been observed on the property. Conversion from the existing coal-fired Plant to the new Plant is not expected to negatively impact wildlife in the area.[99]

74. There are no jurisdictional wetlands located within the Plant site, and no wetlands will be disturbed by construction or operation of the project.[100]

Effect on Rare and Unique Natural Resources

75. The Project will not adversely impact threatened or endangered species. Peregrine falcons, a state-listed threatened species, began nesting under the High Bridge in 1999. To assist in conservation of this rare species, High Bridge Plant installed a falcon nest box on the Plant exhaust stack, which falcons began using in 2000. While the existing smokestack will be removed as part of this Project, the falcon nest box will be removed from the existing exhaust stack prior to stack demolition and during a time when the birds are not nesting. Xcel Energy will work with MDNR Nongame Wildlife staff to determine if an appropriate location and time to place a new falcon nest box at the Project can be identified.[101]

76. Conversion from coal to gas will not adversely impact the habitat of rare fish and mussel species identified by the Minnesota Department of Natural Resources' (MDNR) Natural Heritage Program.[102]

77. Because of their location across the Mississippi from the Project Site, the bat population and the dry sand-and-gravel prairie habitat located at the Lilydale-Harriet Regional Park will not be impacted by the Project.[103]

Design Options that Maximize Energy Efficiencies, Mitigate Adverse Environmental Effects, and Could Accommodate Expansion of Transmission or Generating Capacity

78. The Project is not designed for further expansion. The site, after completion of the demolition of the coal-fired Plant, could conceivably accommodate additional generation facilities. However, Xcel Energy has no current plans for additional development of the site.[104]

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[99] Exhibit 3, at 4-17; Exhibit 18, at 33.

[100] Exhibit 18, at 37; Exhibit 25, at 6.

[101] Exhibit 3, at 4-17; Exhibit 18, at 33.

[102] Exhibit 3, at 4-18; Exhibit 18, at 33.

[103] *Id.*

[104] Exhibit 3, at 2-2 and 2-3.

Use or Paralleling of Existing Rights-of-Way, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries

79. The transmission line route alternatives (other than the preferred route) would follow existing property division lines.

Use of Existing Large Electric Generating Plant Sites

80. The Project site is currently being used for electric generation.[105]

Electrical System Reliability

81. The Project will help Xcel Energy to continue to reliably deliver electricity to its customers in Minnesota and neighboring communities.

Costs of Constructing, Operating, and Maintaining the Facilities Which are Dependent on Design and Route

82. Total construction costs for the Project are estimated to be about $428 million ($394 million construction, plus an estimated $34 million for remediation, site preparation and existing Plant decommissioning).[106]

Adverse Human and Natural Environmental Effects Which Cannot be Avoided and Mitigation Strategies

83. There are few adverse human and environmental effects arising from the Project. Xcel Energy's proposed mitigation strategies adequately mitigate the enumerated impacts from the Project.

Irreversible and Irretrievable Commitments of Resources

84. The Project will not require the irreversible or irretrievable commitment of resources.

Prohibited and Excluded Sites

85. Minn. Rule 4400.3450, subps. 1 and 3, and Minn. Rule 4400.3350 identify sites where siting of new facilities is prohibited or excluded. The proposed site for the Project is not located in a prohibited or excluded area.

Based on the foregoing Summary of Evidence, the Administrative Law Judge makes the following:

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[105] Exhibit 3, at 1-1.

[106] Exhibit 3, at 2-2.

CONCLUSION

The site proposed by the Applicant for construction of the Project meets the site selection standards and criteria established in Minn. Stat. §§ 116C.57 and 116C.575 and Minn. Rules, Chap. 4400.

Based on the foregoing Report, the Administrative Law Judge makes the following:

RECOMMENDATION

That the MEQB issue a site permit to Xcel Energy for construction of the proposed natural gas-fueled, combined cycle generating units at the High Bridge electric generating plant in St. Paul, Minnesota, as proposed in the Site Application, and subject to such conditions as the MEQB determines are reasonable and appropriate.

Dated this 21st day of June, 2005.

Bruce H. Johnson

BRUCE H. JOHNSON
Administrative Law Judge

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
ADMINISTRATIVE LAW SECTION
100 WASHINGTON SQUARE, SUITE 1700
MINNEAPOLIS, MINNESOTA 55401

CERTIFICATE OF SERVICE

Case Title: In the Matter of the Application by Xcel Energy for a Site Permit for the High Bridge Repowering Project in Ramsey County, Minnesota.

OAH Docket No. 4-2901-16586-2
MEQB Docket No. 05-91-PPS-Xcel High Bridge

Mary Osborn certifies that on June 21, 2005, she served a true and correct copy of the attached **REPORT AND RECOMMENDATION** by placing it in the United States mail, properly enveloped, with postage prepaid, addressed to the following individuals:

Robert A. Schroeder, Chair MN Environmental Quality Board 658 Cedar Street, Room 300 St. Paul, MN 55155	James Alders Northern States Power Company 414 Nicollet Mall Minneapolis, MN 55401